

**CLAIMS**

1. A system design method for designing a system  
5 which includes a plurality of system components, the  
method comprising:  
    defining respective functional representations of  
the plurality of system components, each functional  
representation including at least one parameter value;  
10 and  
    automatically defining an allowable set of such  
parameter values in dependence upon the plurality of  
system components, the allowable set of parameter  
values defining compatible parameter values for the  
15 components.
2. A method as claimed in claim 1, wherein one of the  
system components is a bus.
- 20 3. A method as claimed in claim 2, wherein the  
functional representation of the bus includes a  
parameter value relating to bus width.
4. A method as claimed in claim 1, further comprising  
25 choosing an allowable set of parameter values and  
setting the parameter values of the functional  
representations concerned to the values defined by the  
chosen allowable set of parameter values.
- 30 5. A method as claimed in claim 1, further comprising  
the steps of:  
    selecting a plurality of system components;  
    selecting a connection for interconnecting such  
selected system components; and  
35 selecting one of the allowable sets of parameter  
values, in dependence upon said connection.

6. A system component model for use in a method for designing a system comprising a plurality of system components, the model including a functional  
5 representation of the component concerned, which representation includes at least one parameter value for the component.

7. A model as claimed in claim 6, wherein the  
10 parameter relates to data transfer characteristics of the component.

8. A model as claimed in claim 6, wherein the  
parameter relates to a bus width.

15 9. Apparatus for designing a system which includes a plurality of system components, the apparatus comprising:

20 a data storage medium which is operable to store respective functional representations of a plurality of system components, each functional representation including at least one parameter value; and

a processor which is operable to define automatically an allowable set of parameter values for  
25 a selected group of system components.

10. Apparatus as claimed in claim 9, wherein one of the system components is a bus.

30 11. Apparatus as claimed in claim 10, wherein the function representation of the bus includes a parameter value relating to bus width.

12. Apparatus as claimed in claim 9, wherein the  
35 processor is operable to choose an allowable set of parameter values and setting the parameter values of

the functional representations concerned to the values defined by the chosen allowable set of parameter values.

- 5    13. Apparatus as claimed in claim 9, wherein the processor is operable to:
- select a plurality of system components;
  - select a connection for interconnecting such
  - selected system components; and
- 10    select one of the allowable sets of parameter values, in dependence upon said connection.

14. A programmable logic device designed in accordance with a method as claimed in claim 1.

- 15    15. A programmable logic device designed using apparatus as claimed in claim 9.